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modifier includes a toughener.

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9. (AMENDED) The lead protective composition of claim 8, wherein said effective amount of toughener includes elastomeric units.

REMARKS

The status of the Application is as follows. Claims 1 - 12 are pending. The Office rejected claims 1 - 12 under 35 U.S.C. § 102(e), as allegedly anticipated by Gelorme *et al.*, U.S. Patent No. 5,464,726. The Office rejected claims 1 - 12 under 35 U.S.C. § 103(a), as allegedly unpatentable over Ayano *et al.* (4,383,903), Jakob *et al.* (4,116,946), Gaku *et al.* (4,533,727) in view of McCormick *et al.* (5,215,860).

35 U.S.C. § 102(e)

The Office rejected claims 1-12 under 35 U.S.C. § 102(e) as allegedly being anticipated by Gelorme *et al.* Applicants respectfully traverse the Examiner's rejection, maintaining Gelorme *et al.* fails to teach or suggest each and every element of applicants' claimed invention. Specifically, Gelorme *et al.* do not teach or suggest, *inter alia*, Applicants' claim 1.

Applicants' disclosure supports using the composition of claim 1 for "[a] photoinduced polymerizable cyanate ester composition for use in reinforcing a bond comprising: an effective amount of modifier for enhancing fracture properties of said bond and for assisting in reinforcing said bond, wherein the modifier includes a toughener; ..." stating "the compositions or blends of the present invention further include a toughening agent to improve the fracture properties of the compositions." Applicants' disclosure, page 25, lines 20-22. Applicants disclose "[f]lexible molecules containing two (sic) or more epoxy groups can also be used as the toughening agents in the present invention." Applicants disclosure, page 27, lines 8-10.

For example, Applicants state “[s]uitable flexibilizers for the present invention include, but are not limited to, 1,4-butane-diol diglycidyl ethers such as those from Shell Chemical Company under the trademark HELOXY MODIFIER 67, neopentylglycol diglycidyl ether such as that from Shell Chemical Company under the trademark HELOXY MODIFIER 107, trimethylol ethane triglycidyl ethers such as those from Shell Chemical Company under the trademark HELOXY MODIFIER 84, polypropylene glycol glycidyl ether such as that from Shell Chemical Company under the trademark HELOXY MODIFIER 84, polypropylene glycol glycidyl ether such as those from Shell Chemical Company under the trademark HELOXY MODIFIER 32, polyglycidyl ether of castor oil such as that from Shell Chemical Company under the trademark HELOXY MODIFIER 505, dimer acid diglycidyl esters such as those from Shell Chemical Company under the trademark HELOXY MODIFIER 71, resorcinol diglycidyl ether such as that from Shell Chemical Company under the trademark HELOXY 59, epoxidized propylene glycol dioleates such as that under the trademark ELF ATOCHEM VIKOFLES 4050, 1,2-tetradecane oxides such as those under the trademark ELF ATOCHEM VIKOFLES 14, internally epoxidized 1,3-butadiene homopolymers such as those under the trademarks ELF ATOCHEM POLYBD 600 and POLY BD 605, diglycidyl ether, glycidyl glycidates, bis(2,3-epoxy-2-methylpropyl) ether, and polyglycidiepoxydes such as those from DOW Chemical Company under the trademarks DER 732 and DER 736.” Applicants disclosure, page 27, lines 14 - 33, and page 28, lines 1 - 5. In contrast, Gelorme *et al.* do not teach or suggest, *inter alia*, Applicants’ claim 1.

In light of the foregoing discussion, Applicants respectfully assert claims 1 - 12 are in a condition for allowance under 35 U.S.C. § 102(e) because Gelorme *et al.* neither teaches nor suggests a modifier, which includes a toughener of Applicants’ claim 1.

35 U.S.C. § 103(a)

The Office rejected claims 1-12 under 35 U.S.C. § 103(a) as allegedly being unpatentable over

Ayano *et al.* (U.S. Patent 4,383,903). Applicants' respectfully traverse the Examiner's rejection maintaining Ayano *et al.* neither teach or suggest, *inter alia*, Applicants' invention as claimed.

Ayano *et al.* do not disclose, *inter alia*, a reinforcing bond, wherein the modifier includes a toughener.

Applicants respectfully assert that the composition of Applicants' claim 1 is not obvious over Ayano *et al.* because Ayano *et al.* do not teach or suggest, *inter alia*, Applicants' claim 1.

The Examiner rejected claims 1, 7 and 8 as being allegedly unpatentable over Jakob *et al.* (4,116,946). Applicants respectfully traverse the Examiner's rejection maintaining Jakob *et al.* neither teach or suggest *inter alia* Applicants' claim 1.

In light of the foregoing discussion, Applicants respectfully maintain claims 1, 7 and 8 are patentable under 35 U.S.C. § 103(a) and are in a condition for allowance because Jakob *et al.* neither teaches nor suggests *inter alia* Applicants' claim 1.

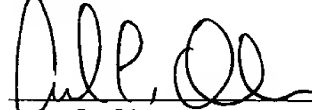
The Examiner rejected claims 1-12 as being allegedly unpatentable over Gaku *et al.* (4,533,727) in view of McCormick *et al.* (5,215,860). Applicants respectfully traverse the Examiner's rejection maintaining that Gaku *et al.* (4,533,727) in view of McCormick *et al.* (5,215,860) neither teach nor suggest, *inter alia*, Applicants' claim 1. The combination fails to disclose the invention as now claimed, which includes a toughener.

In light of the foregoing discussion, Applicants respectfully assert that claims 1-12 are in a condition for allowance under 35 U.S.C. § 102(e) because Gelorme *et al.* fail to teach or suggest *inter alia* Applicants' claim 1. Further, Applicants respectfully assert that claims 1-12 are in a condition for allowance under 35 U.S.C. § 103(a). Ayano *et al.* (4,383,903), Jakob *et al.* (4,116,946), Gaku *et al.* (4,533,727) in view of McCormick *et al.* (5,215,860) fail to teach or suggest as in Applicants' claim 1.

CONCLUSION

Applicants submit that the entire application is in condition for allowance. However, should the Examiner believe anything further is necessary in order to place the application in better condition for allowance, or if the Examiner believes that a telephone interview would be advantageous to resolve the issues presented, the Examiner is invited to contact the Applicants' undersigned representative at the telephone number listed below.

Respectfully submitted,



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APPENDIX (MARKED-UP SPECIFICATION AND CLAIMS):

Formula 2 represents a class of phenol novolac and cresol novolac glycidyl ethers suitable for the present invention. In Formula 2, n ranges from 0 to 8. For epoxy phenolic novolacs, R = H in Formula 2. For epoxy [xresol] cresol novolacs, R = CH₃ in Formula 2. Formula 2 also represents bisphenol F epoxy resins with R = H and n ranges from 0 to 0.15. These materials are also widely available [form] from commercial manufacturers. For example, they are available from Shell Chemical Company under the trademarks EPON 862, EPON 155, and SU-8. They are also available from DOW Chemical Company under the trademarks D.E.R. 354, D.E.N. 431, D.E.N. 438, and D.E.R. 439. In addition, they are available from Ciba-Geigy Corporation under the trademarks ARALDITE PY 306, ARALDITE EPN 1139, ARALDITE EPN 1138, ARALDITE GY 281, ARALDITE GY 285, ARALDITE GY 302-2, ARALDITE LY 9703, ARALDITE XD 4955, AND ARALDITE ECN 9511.

1. (AMENDED) A photoinduced polymerizable cyanate ester composition for use in reinforcing a bond comprising:

a cyanate ester substance comprised of a cationically polymerizable cyanate ester monomer, a cyanate ester prepolymer, or a mixture of the monomer and prepolymer;

an effective amount of modifier for enhancing fracture properties of said bond and for assisting in reinforcing said bond, wherein the modifier includes a toughener;

a filler for controlling thermal expansion of said composition and for assisting in reinforcing said bond; and

a polymerization photoinitiator comprised of a catalytically effective amount of an organometallic complex salt having a metal cation, upon photolysis, said polymerization photoinitiator liberating at least one coordination site and polymerizing the cyanate ester substance, wherein said metal cation in the

organometallic complex is selected from the group consisting of elements of Periodic Groups IVB, VB, VIB, VIIB, and VIIIB.

2. (AMENDED) The photoinduced polymerizable cyanate ester composition of claim 1, wherein said effective amount of [modifier includes a] toughener comprises [of] elastomeric units.

7. (AMENDED) A process for providing a photoinduced polymerizable cyanate ester composition for use in reinforcing a bond, said process comprising the steps of:

providing cyanate ester substance comprised of a cationically polymerizable cyanate ester monomer, a cyanate ester prepolymer, or a mixture of the monomer and prepolymer;

adding to the cyanate ester substance an effective amount of modifier for enhancing fracture properties of said bond and for assisting in reinforcing said bond, wherein the modifier includes a toughener; and

adding to the cyanate ester substance a polymerization photoinitiator comprised of a catalytically effective amount of an organometallic complex salt having a metal cation, upon photolysis, the polymerization photoinitiator liberating at least one coordination site and curing the cyanate ester substance, wherein said metal cation in the organometallic complex is selected from the group consisting of elements of Periodic Groups IVB, VB, VIB, VIIB, and VIIIB.

8. (AMENDED) A lead protective composition comprising the polymerization product of:

- (a) at least one cyanate monomer;
- (b) a polymerization photoinitiator comprised of a catalytically effective amount of an organometallic complex salt having a metal cation, the polymerization photoinitiator liberating at least one coordinative site and polymerizing the at least

one cyanate monomer, wherein said metal cation in the organometallic complex is selected from the group consisting of Periodic Groups IVB, VB, VIB, VIIB, and VIIIB.

- (c) a filler for controlling thermal expansion of said composition and for assisting in reinforcing said bond; and
- (d) an effective amount of a modifier for enhancing fracture properties of the protective composition as compared to a lead bond formed without a lead protective composition and for assisting in reinforcing said bond, wherein the modifier includes a toughener.

9. (AMENDED) The lead protective composition of claim 8, wherein said effective amount of [modifier] toughener includes elastomeric units.